

REMARKS

The application has been reviewed in light of the Office Action mailed on August 10, 2006. Claims 1-3, 5, 6, 8-11, 23, 28, 78, 79, 81, 84 and 85 have been amended without adding new matter. Withdrawn claims 4, 7, 12, 14 and 15 have been cancelled solely to simplify prosecution of the case. Applicants intend to pursue with withdrawn claims in other applications. Reconsideration of the application is requested for the following reasons.

Claim 79 is objected to due to an informality. Claim 79 has been amended as requested.

Claims 1-3, 5, 6, 8, 23, 28, 78, 81, 84 and 85 stand rejected under 35 U.S.C. 102(e) as being anticipated by Hieke, U.S. Patent No. 6,188,095 ("Hieke"). Reconsideration is respectfully requested.

Claim 1 has been amended to further distinguish over Hieke and for stylistic purposes. Claim 1 recites a "plurality of microstructures formed over the substrate, wherein the microstructures are stud capacitors." Further, claim 1 has been amended to recite a "a brace transversely extending between lateral sides of at least two of the microstructure stud capacitors for supporting the at least two stud capacitors." This feature provides, inter alia, braces for stability of the stud capacitor structures. For example, the specification discloses that the braces "prevent the falling of studs." Specification, page 4, line 25.

Heike fails to teach or suggest this limitation. The Office Action asserts that Heike discloses the claimed "braces" by asserting that a "brace (8, 9) transversely extend[s] between lateral sides of at least two of the microstructures (7)." Office Action, page 3. Applicants respectfully disagree because elements 8 and 9 of Heike are not

braces and do not provide support to the “microstructures (7).” With reference to Fig. 4, element 8 of Hieke is a “drain/source buried strap 8 [that] connects capacitor 7 with a drain/source of its respective memory cell.” Co. 1, lines 62-63. The straps 8 do not extend between capacitors 7, but rather extend from a capacitor 7 and terminate in a free-hanging end prior to reaching another capacitor 7, as shown in Fig. 4. Elements 9 of Hieke are “gates” that extend “between associated drain/source regions.” Col. 1, lines 64-65. As shown in Fig. 4, gates 9 extend not between capacitors 7, but rather between the free-hanging ends of the straps 8. Thus, elements 8 and 9 are not “brace[s] ... for supporting the at least two of the microstructure stud capacitors,” and nowhere in Hieke is a teaching that elements 8 and 9 provide such support to capacitors 7.

Thus, Hieke fails to teach or suggest a “a brace transversely extending between lateral sides of at least two of the microstructure stud capacitors for supporting the at least two stud capacitors.” For at least this reason, amended claim 1 distinguishes over Hieke and should be allowed.

Claims 2, 3, 5, 6 and 8 depend from claim 1 and contain every limitation of claim 1. Claims 2, 3, 5, 6 and 8 should be allowed based on the reasons for allowance of claim 1, and also because the unique combinations recited in the dependent claims are neither taught nor suggested by Hieke.

Independent claims 23, 28, 78, 81, 84 and 85 have been amended similar to claim 1 to further distinguish over Hieke. Claims 23, 28, 78, 81, 84 and 85 are allowable over Hieke for similar reasons as discussed above with respect to claim 1.

Claim 78 stands rejected under 35 U.S.C. 102(e) as being anticipated by Hirose, U.S. Patent No. 6,097,097 (“Hirose”). Reconsideration is respectfully requested. Claim 78 recites a “plurality of braces transversely extending between lateral sides of a

microstructure formed over a semiconductor substrate” (emphasis added). Element 1 of Hirose, which the Office Action compare to a “brace,” does not extend between “lateral sides” of Hirose’ elements 3, which the Office Action compares to “microstructures.” Rather, Hirose’s element 1 (which is a circuit) is bonded on the top surfaces of elements 3 (which are wiring pillars). See Fig. 1A and col. 4, lines 6-12 of Hirose. Thus, Hirose fails to teach or suggest a “plurality of braces transversely extending between lateral sides of a microstructure,” and claim 78 is allowable over Hirose for at least this reason.

Claims 79 and 80 stand rejected under 35 U.S.C. 102(e) as being anticipated by Al-Shareef et al., U.S. Patent No. 6,351,005 (“Shareef”). Reconsideration is respectfully requested.

Claim 79 recites a brace “wherein said at least two microstructures are supported only by said at least one brace” (emphasis added). Shareef fails to teach or suggest his limitations. The Office Action asserts that Shareef discloses a brace 20 extending between two microstructures 30, “wherein said at least two microstructures (30) are supported only by said at least one brace (20).” Office Action, page 7. However, as can be seen from Figs. 4 through 8a of Shareef, such is not the case. Elements 30 of Shareef (conductive layers) are deposited into vias 24. See Figs. 4, 5a and associated text. The vias 24 are defined by multiple materials and structures that provide support for the elements 30. The multiple materials and structures include not only layer 20 (an insulating layer), but also layers 28 (conductive layer), layer 26 (dielectric), and layer 22 (structural layer). Thus, elements 30 of Shareef are not supported “only by said at least one brace,” as recited in claim 79. For at least this reason, claims 79 distinguishes over Shareef.

Claim 80 recites an in-process semiconductor device comprising "at least one brace transversely extending between lateral sides of said at least two microstructures, wherein said at least two microstructures are supported only by said at least one brace." For the reasons discussed above with respect to claim 79, claim 80 distinguishes over Shareef.

Applicants acknowledge with appreciation the indication that independent claims 39, 44 and 77 are allowed, and that claims 9-11 would be allowable if rewritten in independent form. Claims 9-11 have been amended to incorporate the limitations of their base claim 1, and are now in immediate condition for allowance.

In view of the above amendment and remarks, applicants believe that pending application is in condition for allowance.

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